CLAIMS

1. A decorative material comprising:

a substrate;

a print layer provided on the substrate;

a protective layer provided on the print layer, the protective layer comprising an ionizing radiation-cured resin; and

a stress relaxing layer as a primer layer provided between the print layer and the protective layer, for relaxing shrinkage stress caused at the time of curing of an ionizing radiation-curable resin for the formation of the ionizing radiation-cured resin constituting the protective layer.

2. The decorative material according to claim 1, wherein the primer layer has a thickness of 1 to 5 μm.

3. The decorative material according to claim 1, wherein the ionizing radiation-cured resin has an average molecular weight between crosslinks of 100 to 200.

4. The decorative material according to claim 1, wherein the ionizing radiation-curable resin is an electron beam-curable resin.

5. The decorative material according to claim 1, wherein the primer layer has a yield strength of not less than 0.6 kgf and a breaking strength of not less than 1.0 kgf, the yield strength and the breaking strength having been measured in such a manner that two biaxially stretched polyethylene terephthalate film strips having a thickness of 50 μm and a width of 10 mm are laminated on top of the other through a 3 μm-thick primer layer so as for the end of one of the strips to overlap with the end of the other strip by 10 mm and, in this state, the two biaxially stretched polyethylene terephthalate film strips are pulled at a temperature of 70℃ in opposite directions.

6. The decorative material according to claim 5,

wherein the primer layer has a yield strength of 0.6 to 3.0 kgf and a breaking strength of 1.0 to 4.0 kgf.

7. A decorative material comprising:

a substrate penetrable with an ionizing radiation-curable resin composition;

a penetration-inhibiting coating provided on the substrate, for inhibiting the penetration of the ionizing radiation-curable resin composition;

a cissing pattern provided on the penetration-inhibiting coating, for repelling the ionizing radiation-curable resin composition; and

a top coat provided on the penetration-inhibiting coating including the cissing pattern, the top coat comprising an ionizing radiation-cured resin composition, concaves being defined by the top coat, the concaves having been formed as a result of cissing of the ionizing radiation-curable resin composition from on the cissing pattern in the course of the formation of the top coat from the ionizing radiation-curable resin composition.

8. The decorative material according to claim 7, wherein the penetration-inhibiting coating has been formed from a composition composed mainly of an oil-resistant resin.

9. The decorative material according to claim 8, wherein the oil-resistant resin is selected from the group consisting of a polyvinylbutyral resin, a polyvinyl alcohol resin, an acrylic resin, and a mixture of at least one of said resins with a thermosetting resin.

10. The decorative material according to claim 8, wherein the oil-resistant resin comprises a thermosetting resin and an ionizing radiation-curable prepolymer, oligomer, or monomer.

11. The decorative material according to claim 7, wherein the top coat contains spherical particles.

12. The decorative material according to claim 11,

wherein the diameter of the spherical particles is 30 to 200% of the thickness of the top coat.

13. The decorative material according to claim 7, wherein the penetration-inhibiting coating functions also as a stress-relaxing layer for relaxing shrinkage stress caused at the time of curing of the ionizing radiation-curable resin for the formation of the ionizing radiation-cured resin constituting the top coat.

14. The decorative material according to claim 13, wherein the penetration-inhibiting coating has a yield strength of not less than 0.6 kgf and a breaking strength of not less than 1.0 kgf, the yield strength and the breaking strength having been measured in such a manner that two biaxially stretched polyethylene terephthalate film strips having a thickness of 50 μm and a width of 10 mm are laminated on top of the other through a 3 μm-thick primer layer so as for the end of one of the strips to overlap with the end of the other strip by 10 mm and, in this state, the two biaxially stretched polyethylene terephthalate film strips are pulled at a temperature of 70℃ in opposite directions.

15. The decorative material according to claim 14, wherein the penetration-inhibiting coating has a yield strength of 0.6 to 3.0 kgf and a breaking strength of 1.0 to 4.0 kgf.

16. A decorative material comprising:

a substrate formed of paper;

a print layer provided on the substrate;

a sealer layer provided on the print layer; and

a top coat provided on the sealer layer, the top coat comprising a crosslinked resin,

the top coat being regulated to a coefficient of dynamic friction of 0.3 to 0.6 in the gloss (75 degrees) range of 10 to 50.

17. The decorative material according to claim 16, wherein the print layer comprises a colored solid layer and/or a pattern layer.

18. The decorative material according to claim 16, wherein the sealer layer contains a matting agent.

19. The decorative material according to claim 16, wherein the sealer layer has a yield strength of not less than 0.6 kgf and a breaking strength of not less than 1.0 kgf, the yield strength and the breaking strength having been measured in such a manner that two biaxially stretched polyethylene terephthalate film strips having a thickness of 50 μm and a width of 10 mm are laminated on top of the other through a 3 μm-thick primer layer so as for the end of one of the strips to overlap with the end of the other strip by 10 mm and, in this state, the two biaxially stretched polyethylene terephthalate film strips are pulled at a temperature of 70°C in opposite directions.

20. The decorative material according to claim 19, wherein the sealer layer has a yield strength of 0.6 to 3.0 kgf and a breaking strength of 1.0 to 4.0 kgf.

21. A decorative material comprising:

a substrate formed of paper;

a first sealer layer provided on the substrate;

a print layer provided on the first sealer layer;

a second sealer layer provided on the print layer;

a top coat provided on the second sealer layer, the top coat comprising a crosslinked resin,

the total thickness of the layers being not more than 50 μm.

22. The decorative material according to claim 21, which has a moisture permeability after 24 hr of not more than 600 g/m^2 as measured according to the cup method specified in JIS (Japanese Industrial Standards).

23. The decorative material according to claim 21, wherein the top coat comprises an ionizing radiation-cured resin.

24. The decorative material according to claim 21, wherein the top coat contains a water-repellent material.

25. The decorative material according to claim 21,

wherein the topcoat contains a hydrophobic silica.

26. The decorative material according to claim 21, wherein the first sealer layer and/or the second sealer layer comprise a crosslinked resin.

27. The decorative material according to claim 21, wherein the first sealer layer and/or the second sealer layer have a yield strength of not less than 0.6 kgf and a breaking strength of not less than 1.0 kgf, the yield strength and the breaking strength having been measured in such a manner that two biaxially stretched polyethylene terephthalate film strips having a thickness of 50 μm and a width of 10 mm are laminated on top of the other through a 3 μm-thick primer layer so as for the end of one of the strips to overlap with the end of the other strip by 10 mm and, in this state, the two biaxially stretched polyethylene terephthalate film strips are pulled at a temperature of 70℃ in opposite directions.

28. The decorative material according to claim 21, wherein the first sealer layer and/or the second sealer layer have a yield strength of 0.6 to 3.0 kgf and a breaking strength of 1.0 to 4.0 kgf.

29. The decorative material according to claim 1, wherein the protective layer has a maximum temperature, at which the protective layer can withstand, of 170℃.

30. The decorative material according to claim 7, ~~16 or 21,~~ wherein the top coat has a maximum temperature, at which the protective layer can withstand, of 170℃.

31. The decorative material according to claim 29, ~~or 30,~~ wherein the decorative material has a surface gloss of not less than 90 as measured with a Gardner 75-degree gloss meter.

32. The decorative material according to claim 1, wherein the print layer comprises a pattern having lower air permeability than the other portions and has, on its whole surface, the protective layer.

33. The decorative material according to claim 32,

wherein the protective layer contains high-hardness spherical particles for improving abrasion resistance.

34. The decorative material according to claim 33, wherein the high-hardness spherical particles are spherical α-alumina.

35. The decorative material according to claim 32, wherein concaves and convexes consistent with the pattern having lower air permeability are provided on the surface of the decorative material.